

KRZYZOWSKI, Janusz

Ophthalmodynamometry as a method for the examination of cerebral arteries in patients with psycho-organic changes. Neurol., neurochir. psychiat. Pol. 14 no.6:903-908 N-D '64

1. Z Kliniki Chorob Psychicznych Akademii Medycznej w Gdansku (Kierownik: prof. dr. T. Bilikiewicz).

DOLMIERSKI, Roman; KRZYZOWSKI, Janusz

Topelectrical procedures in psychotherapy. Neurol. neurochir.
psychiat. Pol. 15 no.2:275-279 Mr-Ap '65.

1. Z Kliniki Chorob Psychicznych Akademii Medycznej w Gdansku
(Kierownik: prof. dr. med. i fil. T. Bilikiewicz).

LENGYEL, Bela, a kemial tudomanyok doktora (Budapest); KSAKvari, Bela,
(Budapest); BOKSAY, Zoltan (Budapest)

The alkaline error of the glass electrode. I. Problem of the
interpretation of the alkaline error. Kem tud kozl MTA 13 no.3:
(EBAI 9:11)
301-315 '60.

1. Eotvos Lorand Tudomanyegyetem Altalanos es Szervetlen Kemial
Intezete, Budapest.
(Electrodes) (Glass)

RAYAKIN, V. N., KUDRIAVTSEV, G. P.; MALTSEV, V. I.

Identification of synthesis of Δ^5 steroid dehydrogenase by the
Mycobacterium globiforme 193 culture with the help of tyrosofite.
Sov. prikl. mikrobiol. i mikrobiol. t no.3:322-326. "Nauka" 1958.
(ZIRA 18:7)

1. Institut mikrobiologii Ak. SSSR.

5(2)
AUTHORS:

Ksandopulo, G. I., Shcherbov, D. P.

SCV/32-24-12-5/45

TITLE:

Determination of Strontium in Silicates and Carbonates in the Flame Photometer With Liquid Light Filter (Opr edeleniye strontsiya v silikatakh i karbonatakh na plamennom fotometre s zhidkim svetofil'trom)

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol 24, Nr 12, pp 1432-1434
(USSR)

ABSTRACT:

A sensitive and selective method for determining strontium in raw mineral materials was developed. The most favorable spectral region for the strontium determination is 640-690 μm . At 590-630 μm , nevertheless, lies the calcium spectral region. For this reason a liquid light filter was tried in an attempt to increase the sensitivity for strontium. A 1% aqueous solution of Rhodamine C with a thickness of 1 cm appeared to be the most effective. To separate the radiation from barium and calcium at 470-540 μm a liquid light filter consisting of a 100% aqueous $\text{Cu}(\text{NO}_3)_2$ solution (D=5 mm) and a 40% aqueous solution of CuCl_2 (D=5 mm) was used. The compensation method

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SOV/32-24-12-5/45

Determination of Strontium in Silicates and Carbonates in the Flame Photometer With Liquid Light Filter

of D. N. Ivanov (Ref 10) was used in the strontium determination. Since the presence of lithium, potassium, and sodium introduces errors into the determination an analytical procedure was worked out which excludes these elements from the final photometric solution.

There are 1 figure, 2 tables, and 11 references, 2 of which are Soviet.

ASSOCIATION: Tsentral'naya laboratoriya Yuzhno-Kazakhstanskogo geologicheskogo upravleniya (Central Laboratory of the South Kazakhstan Geological Administration)

Card 2/2

GRABAROV, P.G.; KSANDOPULO, G.I.; SOLODNIKOVA, Ye.A.; VOYNIOVA, T.N.

Using an alcohol flame for determining free potassium in soil
by flame photometry. Izv.AN Kazakh.SSR.Ser.bot. i pochv. no.2:
60-65 '59. (MIRA 13:5)
(Soils--Analysis) (Potassium) (Flame photometry)

KSANDOPULO, G.I.; GURKINA, T.V.

Flame-photometric method for the determination of microquantities
of lithium. Zav.lab. 28 no.5:560-561 '62. (MIRA 15:6)

1. TSentral'naya khimicheskaya laboratoriya Yuzhno-Kazakhstanskogo
geologicheskogo upravleniya.
(Lithium--Analysis) (Photometry)

KSANDR, Jiri

Straightening curved castings. Slevarenstvi 11 no.5:190-192
Ky '63.

1. Zdarske strojirny a slevarny.

KSANDR, Jiri, inz.

Manufacture of the round teeth of claw clutches. Stroj vyr 12
no.7:506-507 J1'64

1. Zdarske strojirny a slevarmy National Enterprise, Zdar na
Sazavou.

KSANDR, Jiri

Repumping and batching equipment for water glass. Slevarenstvi
ll no. 5:203-204 My '63.

1. Zdarske strojirny a slevaryny, Zdar nad Sazavou.

KSANDR, Jiri; inz.

Hydraulic puller. Stroj vyr 12 no. 2:125 '64.

1. Zdarske strojirny a slevarny, n.p., Zdar nad Sazavou.

"The number of glacial periods in the High Tatra Mountains and the retreat phases of the last one.", p. 3, (OCHRANA PRÍRODY, Vol. 3, #1, Mar. 1953, Czechoslovakia)

SO: Monthly List of East European Acquisitions, Vol. 2, #8, Library of Congress, August 1953, Uncl.

"Protective measures against soil erosion in the Tatra National Park.", p. 30,
(CZESKA PRACDY, Vol. 2, #2, May 1953, Czechoslovakia)

SO: Monthly List of East European Accessions, Vol. 2, #3, Library of
Congress, August 1953, Uncl.

KSANDR, J.

"Soils in the Little Hill on the Southern Slope of the High Tatra Mountains." p. 78
(OCHRANA PŘÍRODY, Vol. 8, No. 4, Sept. 1953) Praha, Czechoslovakia

SO: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 4,
April 1954. Unclassified.

KSANDR, J.

Glaciers in the High Tatra. p. 122. KRASY SLOVENSKY. Bratislava. Vol.31,
no. 4, Apr. 1954.

source; East European Accessions List. (EEAL) Library of Congress.
Vol. 5, No. 8, August 1956.

KSANDR, J.

From the High Tatra to the pieniny. p. 163. KRASY SLOVENSKY. Bratislava.
Vol. 31, no. 6, June 1954.

SOURCE: East European Accessions List. (EEAL) Library of Congress.
Vol. 5, No. 8, August 1956.

KSANDR, J.

Mountain gardens. p. 155.
No. 4, Apr. 1955.

SOURCE: East European Accessions List. (EEAL) Library of Congress.
Vol. 5, No. 8, August 1956.

Kazanec, J.

Začátek, J. Mílošky teratina in the High Tatras. p. 120. ČESTMÍR FRÝDÝK.
Práha. Vol. 10, no. 4, 1946.

SO: Monthly list of East European Accessions, (EPA), LC, Vol. 4, No. 11,
Nov. 1955, Uncl.

KSANDR, J.

Colored snow in the High Tatra National Park. p.277; Vol. 10, no.9,
Nov. 1955. Ochrana Prirody.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no.3, March 1956

KSANDR, J.

Important anniversary of the area of the Tatra National Park. p. 150.
OCHRANA PŘÍRODY. (Ministerstvo kultury. Statní peče o ochranu přírody) Praha.
Vol. 11, no. 5, June 1956.

SOURCE: EEAL - LC Vol. 5 No. 10 Oct. 1956

KSANDR, J.

Traces of glaciation in the valley of Temne Smreciny. p. 206

OCHRANA PRIRODY. Vol. 11, no. 7, Sept. 1956

Praha, Czechoslovakia

SOURCE: East European List (EEAL) Library of
Congress, Vol. 6, No. 1, January 1957

KSANDR, J.

"The Mirror Lakes of Tatra Mountains."

p. 66 (Krasa Slovenska, Vol. 34, No. 2, Feb. 1957, Bratislava, Czechoslovakia)

GEOGRAPHY & GEOLOGY Periodicals

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 11,
Nov. 1950

KMANER, J.

"Nova mapa Vysokych Tatier (A New Map of the High Tatra); a review."

p. 179 (Ceskoslovenska Ethnografie, Vol. 63, no. 2, 1958,
Praha, Czechoslovakia)

Monthly Index of East European Acquisitions (EEAI) LC, Vol. ?, no. ?,
September 1958

KSANDR, J.

GEOGRAPHY & GEOLOGY

Vol. 63, no. 3, 1958.

Ksandr, J. Periglacial phenomena in the western part of the Plzen basin.
p. 193.

Monthly Index of East European Acquisitions (EEAI) LC, Vol. 8, No. 1,
Jan. 1959.

KSANDR, J.

Spring basins with piled up rims in the High Tatra Mountains. p. 142

OCHRANA PRIRODY. Praha, Czechoslovakia. Vol. 14, no. 5, 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960.

Uncl.

KSANDR, Jiri

Pneumatic conveying of bentonite. Slevnárenský 13 no.1, 21-22
Ja '65.

1. Závody strojírny a slevnáry, Zbraslav nad Sázavou,

6
✓ Conductometric and potentiometric study of the hydrolysis
of nickel (II) salts. Z. Kensek and M. Hejstranek (Vysoká
škola chem., Prague). Šestnáct. Československé konf.
Anal. Chem., (Prague) 1952, 42-43 (Publ. 1953), No. 1.

Six salts can be titrated conductometrically and potentiometrically
with NaOH and the stoichiometry of the end point
studied as a function of temp., anions, salt concn., titra-
tion speed, and order of admn. of reagents. At 25°, the ppt.
contains basic salts varying slightly with salt, concn., and
titration speed. At 90°, stoichiometric end points were ob-
tained with the chloride, chlorate, and nitrate but not with
the sulfate. Hydrolysis consts. at 25° were detd. for Ni-
 SO_4 , $\text{Ni}(\text{NO}_3)_2$, NiCl_2 , and $\text{Ni}(\text{ClO}_4)_2$, as 0.32 , 0.595 , 0.51 ,
and 0.502×10^{-4} , resp.

Herbert Morawetz

CH

AT

PM

K. DANKO, J. BENEŠ
Czechoslovakia/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61879

Author: Cuta, Frantisek; Ksandr, Zbynek; Hejtmanek, Milos

Institution: None

Title: Potentiometric and Conductimetric Titration of Free Acid and Acid
Liberated from Nickel Salt on Hydrolysis at High Temperature

Original
Periodical: Potenciometricka a konduktometricka titrace kyselin volnych a hydrolyzovanych z nikelnatych soli za vyssich teplot, Chem. listy,
1954, 48, No 9, 1341-1345; Czech; Sb. chekhosl. khim. rabot, 1955,
20, No 2, 381-386; Russian; German resumé

Abstract: A low temperature free acid is titrated in presence of Ni salt by
potentiometric or conductimetric method. On titration of $\text{Ni}(\text{ClO}_4)_2$
and $\text{Ni}(\text{NO}_3)_2$ with NaOH solution the entire acid liberated by hydrolysis
can be determined at 90° . With NiCl_2 and NiSO_4 by NaOH titration
it is possible to determine, respectively, 99% and 97% of the
substance at temperatures $< 50^\circ$. Hydrolysis takes place incompletely.

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Czechoslovakia/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61879

Abstract: Results that are too low are caused by formation of slightly soluble basic salts.

Chem. Abstrs., 1955, 49, No 2, 780.

Card 2/2

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827010002-1

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827010002-1"

KSANDR, Z.; NEUVIRT, J.

Simultaneous photometric determination of manganese and iron
by means of benzhydroxamate compounds. Coll Cz Chem 27 no.6:
1381-1386 Je '62.

1. Institut fur analytische Chemie, Technische Hochschule
fur Chemie, Prag.

NEUVIRT, J.; KSANDR, Z.

Determination of water traces in organic solvents by
infrared spectral analysis. Coll Cz Chem 29 no.4:1068-1072
Ap '34.

1. Institute of Analytical Chemistry, Higher School of
Chemical Technology, Prague.

KSANDR, Zb.

"Nuclear magnetic resonance and its application in inorganic Chemistry" by ".Fluck. Reviewed by Zb.Ksandr. Chem listy 58 no.11:1352-1353 N '64.

CZECHOSLOVAKIA

KSANDR, Z; SAMEK, Z; SPIRKO, V; FERLES, M

1. Department of Analytical Chemistry - (for ?). 2: Department of Organic Chemistry - (for ?), Institute of Chemical Technology. 3: Institute of Organic Chemistry and Biochemistry, - (for ?). Czechoslovak Academy of Sciences, Prague

Prague, Collection of Czechoslovak Chemical Communications,
No 7, July 1966, pp 3003-3007

"Studies in the pyridine series. Part 13: NMR-shift ranges
for some isomeric alkylsubstituted tetrahydropyridines."

GETSOV, O., avtolyubitel'; GORBATOV, V.; KANDROV, N., shofer.

Readers' suggestions. Za rul. 16 no.11:19 N '58. (MIRA 12:1)

1.Uchkhоз "Krasnyy veterinar," Khar'kovskaya oblast' (for Kandrov)
(Automobiles)

USSR / Human and Animal Physiology. Metabolism.

T

Abs Jour : Ref Zbir - Biol., No 15, 1958, No. 69782

Author : Botobal, B. Ye.; Ksandrova, S. Ye.; Nemerovskiy, L. I.;
Perel'mutr, A. S.

Inst : Not given

Title : Apparatuses for Determining Gas Exchange

Orig Pub : Materials on Metabolic Experiments and Scientific
Achievements in the Medical Industry, 1957, No 4 (23),
56-73

Abstract : A description and comparative characterization of the
existing types of Soviet and foreign apparatuses for
studying human gas exchange.

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14

VOTCHAL, B.Ye., KANDROVA, S.Ye.

Pneumotaxometer. Med. prot. 12 no. 6152-55 Je '58 (MIRA 11:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo
instrumentariya i oborudovaniya.
(RESPIROMETER)

PEREL'MUTR, A. S.; KATSUBA, M. N.; KSANDROVA, S. Ye.

Universal pneumotachograph. Nov. med. tekhn. no. 1:18-37 '61.
(MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh
instrumentov i oborudovaniya.

(RESPIROMETER)

PEREL'MUTR, A.S.; KATSUBA, M.N.; KSANDROVA, S.Ye.

Universal pneumotachograph. Med. prom. 15 no. 4:43-48 Ap '61.
(MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh
instrumentov i oborudovaniya.
(RESPIRATION) (PHYSIOLOGICAL APPARATUS)

KSANDROVA, S.Ye.

PDV-1 apparatus for aiding respiration. Nov. med. tekhn. no.3:
104-107 '65. (MIRA 19:1)

23927
3/35/61/000/006/009/044
A001/A101

3,1200

AUTHOR:

Ksanfomality, L.

TITLE:

Systematic errors of electronic devices used for determination of light polarization degree

PERIODICAL:

Referativnyy zhurnal, Astronomiya i Gecdeziya, no. 6, 1961, 17, abstract 6A168 ("Byul. Abastumansk. astrofiz. observ.", 1959, no. 24, 175 - 178, Engl. summary)

TEXT: Serious errors are inherent to electronic polarimeters, caused by some features of their electrical circuits. The polarized component F_n and the non-polarized one F of a light flux give rise to variable I_{var} and constant I components, of the $\Phi\beta Y$ (FEU) current, proportional to the former. In the load circuit RC , variable U_{var} and constant U component of the output voltage of the FEU are singled out. The ratio of the variable component to the constant one at the recording device is considered as polarization degree of the light investigated. However the relation $F/F = U_{var}/U$

can be valid in the case only when the loads on variable and constant current are

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3/055/61/000/006/009/044
A001/A101

Systematic errors of electronic devices ...

equal; i.e.

$$Z_{var}/Z = Z_{var}/R = 1.$$

Otherwise the following relation must be satisfied:

$$F_n/F = (U_{var}/U) K,$$

$$\text{where } K = Z/Z_{var} = R/Z_{var} = \sqrt{1 + 39.5 f^2(RC)^2}.$$

Here R is expressed in megohms, C in microfarads, f in cps. It is easy to see that readings of the device can be only understated (or true at C = 0); error rises rapidly with increasing frequency and time constant. The author cites the errors of the Pulkovo and Atastumani polarimeters which proved to be inadmissibly great and which should be taken into account. He notes that reactance of circuits in similar devices can not be neglected, contrary to the wide-spread opinion, even at very low frequencies.

V. Yesipov

[Abstracter's note: Complete translation]

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KSANFOMALITI, L., DZHAPIASHVILI, V.

"First Results of Observations With An Automatic Electrophotometer-Polarimeter."
paper presented at IAU Symposium on the Moon, Leningrad, USSR, 6-8 Dec 60.

A new automatic electrophotometer-polarimeter with an electronic computer for observations of the Moon was tested at the Abastumani Observatory. A description of the device is given.

KSANFOMALITI, L.V.

Characteristics of the performance of photomultipliers in
recording modulated faint light. Biul.Abast.astrofiz.obser.
no.26:169-175 '61. (MIRA 15:3)
(Photoelectric multipliers)

KSANFOMALITI, L.V.

Design of the photoelectric guide for a solar radio telescope.
Biul.Abast.astrofiz.obser. no.26:177-181 '61. (MIRA 15:3)
(Telescope, Radio)

3.1200 (1051,114,1057)

S/107/62/000/003/001/001
D273/D305

AUTHOR: Ksanfomaliti, L., Engineer

TITLE: On the threshold of distant worlds

PERIODICAL: Radio, no. 3, 1962, 10-12

TEXT: The importance of electronics in the observation of planets and stars is stated to be at least equal to that of optics. An example given is that of an automatic electronic polarimeter designed by the Abastumani Astrophysical Observatory of the Academy of Sciences Gruzinskaya SSR. This instrument, consisting of 38 tubes and 35 diodes, is a computer which works out light beam parameter equations within 0.01 second. Problems of optics in the 4200 - 7000 Å range, corresponding to a frequency range of 430 to 715 million mc/s, are solved by electronics. These include photometry, spectrometry, polarimetry, etc. Receivers which are a necessity in such instruments are characterized by their frequency range and their sensitivity. In the widest sense, a receiver in astronomy has a photo-electronic amplifier (FEU) consisting of a photo-cell and an electronic amplifier, but a limitation is brought about by the heat emission of

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S/107/62/000/003/001/001
D273/D305

On the threshold of ...

the photocathode which becomes perceptible at great amplification and by the quantum structure of light. A simple astronomic photometer is described as consisting of a rotating perforated disc which modulated the light stream. A phase detector is synchronized with the modulation and makes it possible to detect signals even when the signal/noise ratio is 0.001. A programmer then presents the results. Thermoelements and bolometers are other irreplaceable instruments in astronomy and their basic principles are explained. As opposed to these single channel instruments, some multi-channel types are developed such as the electronic optical converter [?](EOP). The type of photo-cathode used determines the spectral range available. Special electronic lenses direct the photo-electrons on to the anode which is a fluorescent screen. The EOP increase the brilliance of an image as much as 60 to 120 times, whereas the single-channel systems only increase it 6 to 15 times. Work on a television astronomic system has been carried out in the Soviet Union by N.F. Kupervich of the Pulkovskaya Observatory, in which an image of amplified brilliance is projected on to a television screen so that small details are visible which would not be seen on a photographic plate. Astronomical advantages of

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On the threshold of ...

S/107/62/000/003/001/001
D273/D305

Lunar observatories are also mentioned. There are 3 figures.

ASSOCIATION: Abastumanskaya astrofizicheskaya observatoriya AN Gruzin-
koy SSR (Abastuman Astrophysical Observatory of the AS
Gruzinokaya SSR)

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Card 3/3

ACCESSION NR: AR3010375

S/0269/63/000/008/0060/0060

SOURCE: RZh. Astronomiya. Abs. 8.51.433

AUTHOR: Ksanfomaliti, L.-V.

TITLE: Polarimetric images of the Moon

CITED SOURCE: Astron. tsirkulyar, no. 231, noyabrya 4, 1962, 12-14

TOPIC TAGS: Moon, polarimetry

TRANSLATION: The Abastumani Observatory now has a registering polarovisor -- an instrument designed to obtain polarimetric images of astronomical objects by means of linewise scanning. The brightness of a point on the polarovisor screen is determined by the degree of polarization and is independent of brightness in natural light. Photographs of the Moon obtained by this method have shown the presence of lunar objects not identifiable with previously known ones. The shape of the objects changes with phase. Illustrations included. L. R.

DATE ACQ: 28Aug63

SUB CODE: AS

ENCL: 00

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KSANFQMALITI, L.V.

Selecting the proper operating conditions for photomultipliers.
Prib. i tekhn. eksp. 7 no.2:121-123 Mr-Ap '62. (MIRA 15:5)

1. Abastumanskaya astrofizicheskaya observatoriya AN GruzSSR.
(Photoelectric multipliers)

KSANFOMALITI, L.V.

Adaptive phase filter. Biul. Abast. astrofiz. obser. no.28:
213-217 '62. (MIRA 16:7)
(Radio filters)

KSANFOMALITI, L.V.

Photocathodes and the quantum counting efficiency. Biul. Abast.
astrofiz. obser. no.28:219-221 '62. (MIRA 16:7)
(Amplifiers (Electronics)) (Quantum theory)

KASNFMALITI, L.V.; DZHAPIASHVILI, V.P.

Polarimetric images of the moon. Astron.tsir. no.231:12-14 N '62.
(MIRA 16:4)

1. Abastumanskaya astrofizicheskaya observatoriya AN Gruzinakoy SSR
na gore Kanobili.

(Moon-Surface)

S/275/63/000/001/021/035
D413/D308

AUTHOR: Keanfomaliti, L. V.

TITLE: The 13723 (1EP23) automatic electronic polarimeter

PERIODICAL: Referativnyy zhurnal, Elektronika i yeye primeneniye,
no. 1, 1963, 3, abstract 1V 15 (Uch. zap. Khar'kovsk.
un-t, v. 122, 1962, Tr. Astron. observ., no. 14,
91-99)

TEXT: A description is given of an instrument in which the problem of direct measurement of degree of light polarization (in %) and of phase angle, with their indication on pointer instruments, has been solved. The formula for polarization degree is put into the form of that for modulation depth in radio engineering. The instrument described is used to measure the parameters appearing in the formula and to compute the degree of polarization. The measurement of phase angle is achieved by integration of the voltage on one of the anodes of a trigger circuit operated by pulse trains, one of which has the phase being measured while the other has a fixed

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The 1EP23 automatic ...

S/275/63/000/001/021/035
D413/D308

phase. The instrument has an AGC system and a photomultiplier as a control element. The electrical circuit and schematic diagram of the optical part of the instrument are given. A narrow-band AC amplifier is employed in the instrument. The accuracy falls within the limits 0.15 - 0.5%. The sensitivity is about 4×10^{-18} W. Using the 1EP23 polarimeter one can construct a polarization chart of the moon. 9 references. [Abstracter's note: Complete translation.]

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KSANFOMALITI, L.V.

DJAPLASHVILI, V.P., KSANFOMALITI, L.V.

Electronic Polarimetric Images of the Moon

Report to be submitted for the 4th International Space Science Symposium
(COSPAR) Warsaw, 2-12 June 63

KSANFOMALITI, L.V.

Photomultipliers in automatic amplification control circuits; review.
Prib. i tekhn. eksp. 8 no.3:5-14 My-Je '63. (MIRA 16:9)

1. Abastumanskaya astrofizicheskaya observatoriya AN GruzSSR.
(Photoelectric multipliers) (Automatic control)

AKCUMONALITI, L.V.

Electronic photoguide. Biul. Abast. astrofiz. obser. no.30:
137-138 '64. (MIM 17:5)

KSANFOMALITI, L., kand. fiz.-matem. nauk

Electronic polarizer discloses the moon's secrets. Radio
no.9:8-9 S '64. (MIRA 17:12)

KSANFCM11711, 11/1.

Photometer based on the scalar "Wolne" PS-S. Siul. Abast. astrofiz.
obser. 32:197-200 '65. 5
(MIRA 18:1C)

100-1-6
EWT(1)/BDS/EEC(b)- AFPTC ASD, ESL-7 APDC
ACCESSION NR: AP 5002711 5/0120/63/000/003/0005/0014

AUTHOR: Ksanfomaliti, L. V.

TITLE: Multiplier phototubes in automatic gain control (AGC). (A review)

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1963, 5-14

TOPIC TAGS: multiplier phototube, AGC

ABSTRACT: Instability of gain of electron multipliers due to supply-voltage fluctuations has been considered as a serious handicap in using the multipliers. Various means and schemes for stabilizing the channel that includes the multiplier are considered in the article: (a) voltage stabilization in one stage of the multiplier or the "R-characteristic method"; (b) a differential method where one "floating" dynode has a separate supply; (c) a Zener-diode scheme (B. Flage, O. Harris, Rev. Scient. Instrum., 1955, 26, 619); (d) a "ring" AGC method (A. M. Ivanchenko, PTE, 1959, No. 2, 150); (e) a high-speed AGC system (suggested for studying polarization of the Moon). The following advantages of the ring AGC system are listed: (1) sensitivity fluctuations of the entire system are corrected; (2) the multiplier is protected from current overloads which

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L 13371-63

ACCESSION NR: AP3002711

otherwise would result in its irreversible fatigue; (3) effects of instability of light source (in astronomy, optical spectrometry) are eliminated; (4) a very broad range of luminous flux; and (5) the feasibility of building certain special instruments which cannot be materialized without the ring system. Orig. art. has: 17 figures.

ASSOCIATION: Abastumanskaya astrofizicheskaya observatoriya AN GruzSSR
(Abastumani Astrophysical Observatory, AN GruzSSR)

SUBMITTED: 29Aug62

DATE ACQ: 12Jul63

ENCL: 00

SUB CODE: SD

NO REF SOV: 026

OTHER: 006

Card 2/2

SMELOV, N.S.; YEGOROV, G.I.; KOKOLIN, A.I.; KSANFOPULO, P.I.; RAKHMANOVA, N.V.;
KRYLOVA, Ye.Ye.; RYKOVA, L.K.; PER, M.I.; PETRUSHAEVSKIY, S.I.; PUSTOVAYA,
A.I.; TUNGSKOVA, A.I.; VELICHKO, Ye.V.; PLAVIT, P.Ya.; GOL'DENBERG, M.M.

Evaluation of results of the treatment of early syphilis according
to 1949 scheme. Vest. vener., Moskva No.1:29-33 Jan-Feb 52. (CIML 21:4)

1. Professor for Smelov and Per. 2. Central Skin-Venerological Institute
(Director--N.M. Turanov) for Smelov, Yagorov, Sokolin, Ksanfopulo,
Rakhmanova, Krylova and Rykov; Hospital imeni Korolenko (Head Physician
Docent V.P. Volkov) for Per, Petrushhevskiy; First Venereological Dis-
pensary (Head Physician--K.A. Vinogradova) for Pustovaya and Tunguskova);
Second Venereological Dispensary (Head Physician--V.G. Bronshteyn) for
Velichko, Plavit and Gol'denberg.

KSANFCPULO, P. I.

Dissertation: "An Electrophoretic Investigation of Blood Serum Proteins in Patients Undergoing Medical Treatment." Cand Med Sci, First Moscow Order of Lenin Medical Inst, 21 Jun 54. (Vechernyaya Moskva, Moscow, 11 Jun 54)

SO: SUM 318, 23 Dec. 1954

RAKHMANOV, V.A., professor; KHANTOPULO, P.I., kandidat meditsinskikh nauk

Resochin in the treatment of lupus erythematosus. Vest.ven. i derm.
30 no.4:8-10 Jl-Ag '56. (MIRA 9:10)

1. Is kafedry kozhnykh i venericheskikh bolezney I Moskovskogo
ordena Lenina meditsinskogo instituta imeni I.M. Sechenova)

(LUPUS ERYTHEMATOSUS, DISCOID, ther.

chloroquine phosphate)

(CHLOROQUINE, ther. use

lupus erythematosus, discoid, ther. with chloroquine
phosphate)

LEVIN, A.M., dots., KSAMPOULO, P.I., assistant, PRORVICH, L.V., assistant

Diprazine in certain pruritic dermatoses. Vest.derm. i ven. 32
no.5:63-64 S-0 '58 (MIRA 11:11)

1. Iz kafedry kozhnykh i venericheskikh bolezney (zav. - prof.
V.A. Rakhmanov) I Moskovskogo ordena Lenina meditsinskogo
instituta im. I.M. Sechenova.

(PRURITIS, ther.

10-(2-dimethylamine-2-methylethyl) phenothiazine
(Rus))

(PHENOTHAZINE, related cpds.

10-(2-dimethylamine-2-methylloethyl)phenothiazine in
pruritis (Rus))

LEVIN, A.M., dotsent; KSANPOULO, P.I., assistant; PRORVICH, L.V., assistant

Results of the use of vitamin B12 in certain skin diseases. Vest.
derm. i vopr. 33 no.2:54-57 Mr-Ap '59. (MIRA 12:7)

1. Iz kafedry kozhnykh i venericheskikh bolezney (zav. - chlen-korrespondent AMN SSSR prof. V. A. Rukhmanov) I Moskovskogo ordena Lenina meditsinskogo instituta.

(SKIN DISEASES, ther.

vitamin B12 (Rus))

(VITAMIN B12, ther. use,

skin dis. (Rus))

KSANFOPULO, P.I.; STROYEVA, L.V.

Candidiasis developing during griseofulvin treatment in
microsporia. Vest. derm. i ven. 37 no.2:77-78 F'63.
(MIRA 16:10)
1. Iz kafedry kozhnykh bolezney (zav. - chlen-korrespondent
AMN SSSR prof. V.A.Rakhmanov) I Moskovskogo ordena Lenina
meditsinskogo instituta imeni N.M.Sechenova.

KSANPOULO, Z. A.

MALYKIN, R.J.; KSANPOULO, Z.A.; BRUJEVIC, T.S.; ZERCALOVA, O.Z.

Role of the nervous system in the pathogenesis of eczema and neuro-
dermatitis. Cesk.derm. 26 no.6:213-214 June 51. (CIML 21:1)

KSANTOPULO, Ya.F.; KOTLYARSKIY, D.I.; IGNATOV, V.A.; ALKINA, E.Kh.; inzh.;
SMIRNOV, Yu.A.; inzh.; KUNITSINA, T.I., inzh.; IGNATOVA, N.T., inzh.;
KIRSANOV, A.I., elektromekhanik; MOLODTSOV, N.A., inzh.; ROD'KO, G.V.

Discussion of two articles "Stamping apparatus for signaling, central control and block systems." and "Periods for testing relays used in signaling, central control and block systems." Avtom., telem. i sviaz'
no. 12:35-36 D '57. (MIRA 10:12)

1.Nachal'nik Adzhikabul'skoy distantsii signalizatsii i svyazi Azerbaydzhanskoy dorogi (for Ksantopulo). 2.Starshiy elektromekhanik Moskovskoy distantsii signalizatsii i svyazi Oktyabr'skoy dorogi (for Kotlyarskiy). 3.Ayaguzskayadistsantsiya signalizatsii i svyazi Turkestan-Sibirskoy dorogi (for Alkina, Smirnov, Kunitsyna, Ignatova). 4.Zaveduyushchiy postom dispatcherskoy tsentralizatsii Ayaguzskoy distantsii signalizatsii i svyazi Turkestan-Sibirskoy dorogi (for Ignatov). 5.Krasnolimanskaya distantsiya signalizatsii i svyazi Donetskoy doregi (for Kirsanov). 6.Moskovskaya distantsiya signalizatsii i svyazi Gor'kovskoy dorogi (for Molodtsov). 7.Zamestitel' nachal'nika sluzhby signalizatsii i svyazi Orenburgskoy dorogi (for Rod'ko).

(Railroads--Signaling)

KSANTOPULO, Ya.F.

Wooden insulator pins. Avtom., telem.i sviaz 2 no.4:39
Ap '58. (MIRA 12:12)

1. Nachal'nik Adzhi-Kabul'skoy distantsii signalizatsii i
svyazi Azerbaydzhanskoy dorogi.
(Railroads---Equipment and supplies)

KSAVERY, Rovinski

Paper presented as an introduction to the discussion on medical ethics of the Wroclaw section of the Polish Medical Society, 7 November, 1956. Polski tygod. lek. 12 no.11:411-414 11 Mar 57.

1. Adres: Warszawa, ul. Sniadeckich 18 m. 5.
(ETHICS, MEDICAL,
(Pol))

KSCHWENDT, Pal

Problems of manufacturing machine tools of increased accuracy and
experiences gained in their operation. Gepyartastechn 1 no.7:241-247
O '61.

1. Budapest Machine Tool Factory, Budapest.

CZECHOSLOVAKIA / Chemical Technology. Food Industry. H

Abs Jour: Ref Zhur-Khimiya, No 22, 1958, 75551.

Author : Kselik, R.

Inst : Not given.

Title : The Rapid Method for Pickling Mushrooms.

Orig Pub: Ceska mykol., 1956, 10, No 3, 190-192.

Abstract: A new rapid method for pickling mushrooms through the use of *Bacillus bulgaricus* is described. Yogurt is used as the culture for the inoculations. The process is carried out for merely 24 hours, with a gradual decrease in the temperature from 45°C. The product obtained contains lactic acid and no other acids.

Card 1/1

KSENCHEIN, Ye.I. [Ksenchyn, IE.I.]

We are for an overall maintenance and care. Mekh. sil'. hosp.
14 no.11:6-7 N'63. (MIRA 17:2)

1. Predsedatel' kolkhoza im. Chapayeva Nemirovskogo proizvodstven-
nogo upravleniya Vinnitskoy oblasti.

CAT. NO. : REF. :
CULTIVATED PLANTS. Grains. Leguminous Grains.
ART. NO. : REF ZHUR. BIOLOGIYA, NO. 4, 1959, No. 15641

AUTHOR : Ksenda, T.
INST. : Krasnoyarsk Sci. Res. Inst. of Agriculture
TITLE : Results of Millet Selection

CRIG. JUB. : Byul. nauchno-tekh. inform. Krasnoyarskogo n.-i.
in-ta s. kh., 1957, No. 1-2, 26-28

ABSTRACT : Two varieties-- Kamalinskoye 391 and Kamalinskoye
40 have been evolved and put into production. Kamalinskoye 391
is characterized by uniform ripening of the grain in heads with absolute weight of 5 to 7
grams, high output of groats (76 %), low membranaceousness, feeble shattering and
resistance to lodging. The vegetation period is 52 to 75 days. It is feebly resistant to wheat smut. It is ranged in the subtaiga zone of Krasnoyarskiy Kray. Kamalinskoye 40 is ranged in the subtaiga zone and northern forest-steppe of Krasnoyarskiy Kray, has a vegetation period of 65 to 81 days, is

CARD: 1/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000827010002-
CAT. NO. : CULTIVATED PLANTS.

ART. NO. : REF ZHUR. BIOLOGIYA, NO. 4, 1959, No. 15641

AUTHOR :
INST. :
TITLE :

CRIG. JUB. :

ABSTRACT : resistant to drought, feebly infected with wheat smut, average resistance to lodging, 18 to 20 % membranaceousness, groat output 72 to 74 % and crop yield of 32 to 47 centners/hectare. -- A.F. Khlystova

CARD: 2/2

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827010002-1

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827010002-1"

ALEKSEYEVA, Ye.I., kand. sel'khoz. nauk; BUZINOV, P.A., kand. sel'khoz. nauk; VODOLAGIN, V.D.; VOLKHOVSKAYA, U.V.; GLUSHCHENKO, N.N., kand. biol. nauk; GURVICH, N.L., doktor biol. nauk; ZHELEZNOV, P.A., kand. sel'khoz. nauk; KSENDZ... A.T.; LESHCHUK, T.Ya.; LUK'YANOV, I.A., kand. sel'khoz. nauk; MAYCHENKO, Z.G., kand. sel'khoz. nauk; TANASIYENKO, F.S., kand. khim. nauk; ZNAMENSKIY, M.P.; PERSIDSKAYA, K.O.; PODLESNOVA, A.F.; ROOCHIY, I.Ya.; REZNIKOV, A.R.; SHUL'GIN, G.T.; KHOTIN, A.A., doktor sel'khoz. nauk; LAPSHINA, O.V., red.; MINENKOVA, V.R., red.; MAKHOVA, N.N., tekhn. red.; BALLOD, A.I., tekhn. red.

[Aromatic plants] Efiromaslichnye kul'tury. Moskva, Sel'-khozizdat, 1963. 358 p. (MIRA 16:12)
(Ukraine--Aromatic plants)

S/0051/64/016/001/0063/0068

ACCESSION NR: AP4011485

AUTHOR: Karapetyan, G.O.: Ksendzatskaya, Yu.N.; Yudin, D.M.

TITLE: Investigation of the kinetics of formation of ZnS:Mn phosphor by the method of electron paramagnetic resonance

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 63-68

TOPIC TAGS: phosphor synthesis, manganese activated zinc sulfide, ZnS:Mn phosphor, photoluminescence, cathodoluminescence, manganese $^{2+}$, EPR, sphalerite, wurtzite

ABSTRACT: Despite the fact that there have been numerous investigations of ZnS-Mn phosphors, adequate data are still lacking on the kinetics of the synthesis process and on the formation of luminescence centers in phosphors of this type. The present work was devoted to investigation of the kinetics of formation of Mn activated zinc sulfide luminophors. There were studied the electron paramagnetic resonance spectra, the luminescence spectra and the intensity of luminescence under cathodic and ultraviolet stimulation as a function of the activator concentration, the synthesis temperature and the action of ionizing radiation. Mn activated ZnS phosphor is particularly suitable for investigation by the method of electron paramagnetic resonance

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ACC.NR: AP4011485

in view of the fact that the EPR spectrum of the Mn ion varies greatly with changes in lattice structure. The specimens were prepared in the form of powder in sealed quartz tubes 3 mm in diameter. The Mn^{2+} concentration was varied in the range from 10^{-5} to 8×10^{-4} g/g; the heating temperature was varied in the range from 780 to 1200°C; the heating time in the range from 5 to 30 min. The EPR and luminescence spectra are reproduced in figures. In the range of low (10^{-5} g/g) Mn concentrations the manganese luminescence spectrum does not undergo significant changes with variation in heating conditions, but at higher Mn concentrations significant alterations are observed. These changes are attributed, on the basis of the experimental data, to change from the sphalerite to the wurtzite structure with increase of the heating temperature. The experimental results indicate moreover, that the EPR method can be used for investigating the rate of formation of crystals, the character of the crystals and the conditions of penetration of the activator into the crystal phosphor.

Orig.art.has: 5 figures and 1 table

ASSOCIATION: none

SUBMITTED: 09Apr63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: PH

MR REV Sov: 002

OTHER: 008

Card 2/2

88y1

7.1110 (100-105, 1110)

S/024/60/000/006/007/015
E192/E482

AUTHORS: Aranovich, R.M., Ksendzatskiy, I.G. and Timofeyev, P.V.,
(Moscow)

TITLE: Cold-Cathode Electronic Tubes

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Energetika i avtomatika, 1960, No.6, pp.143-147

TEXT: The cathodes employed in normal electron tubes produce the emission by virtue of being heated to comparatively high temperatures. Apart from being heated, these cathodes have the disadvantage of a comparatively short life. Consequently, attempts have been made to develop cold cathodes and in 1938 two of the authors (Refs.1,2) discovered that it was possible to obtain a sustained secondary emission from metal cathodes coated with thin layers of high-resistivity materials. Recent years have witnessed the development of an electron tube based on a magnesium oxide cathode (Ref.3). Such cathodes were prepared and investigated also. The base of the cathode was made of nickel which was coated with magnesium carbonate by means of cathophoresis, the thickness of the coating being 50 μ . The cathode was heated in a vacuum so that the magnesium carbonate was decomposed into MgO and

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Cold-Cathode Electronic Tubes

CO_2 and the layer of the magnesium carbonate on the cathode was converted into a layer of magnesium oxide whose thickness was about 30μ . The layer of magnesium oxide prepared in this way had a porous structure capable of sustaining electron emission. However, in order to produce the emission, it is necessary to place a grid in the vicinity of the cathode and apply a potential difference between the nickel base of the cathode and the grid. The emission can be obtained if the potential difference is about 120 V, provided the energy of the electrons bombarding the cathode is less than 50 eV. The emission can be initiated by bombarding a cathode with an electron current of 10^{-10} A , provided the electron energies are of the order of a few eV. When the electrons pass through the layer of magnesium oxide the cathode is heated. This effect was investigated experimentally and the results are shown in a figure. The electron emission from magnesium-oxide cathodes is probably due to the field emission from the nickel base of the cathode which is caused by the action of the positive charges produced on the surface layer of the magnesium oxide while this is bombarded by the electron

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E192/F482**Cold-Cathode Electronic Tubes**

current at the instant of initiating emission. During the operation of the cathode, the positive charge on the magnesium-oxide layer is maintained as a result of the secondary emission from the walls of its pores, which emit the electrons. The magnesium-oxide cathodes were used in constructing an amplifier pentode tube which, apart from the three grids, had a starter electrode consisting of tungsten filaments; the filaments were situated in special holes provided in the anode cylinder. The construction of the tube is shown diagrammatically in Fig.2, where 1 is the magnesium-oxide cathode, 2, 3 and 4 are the grids, 5 is the anode and 6 and 6' are tungsten filaments of the starter. One side of the filaments is connected to the anode, while their remaining terminals are attached to special input pins of the tube; the starter filaments are used as an electron source for bombarding the magnesium-oxide cathode at the instant of switching-on the tube. The tube was constructed of standard components and had the dimensions of the tube type 3071C (30P1S). The grid-anode characteristics of the tubes were

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E192/E482**Cold-Cathode Electronic Tubes**

measured. One set of experimental curves is shown in Fig.6, where the anode current I_a is plotted as a function of the voltage U_y applied to the control grid; the voltage of the screen grid was 250 V, while the anode voltage was varied from 180 to 300 V. From these experimental characteristics it is seen that a slope of 0.5 to 0.6 mA/V can be obtained over a comparatively wide linear region. The tubes of this type can operate only if the potentials at all the grids and the anodes are positive with respect to the cathode; the control of the anode currents can only be achieved if the control grid is given a positive potential. Secondly, the tubes have a comparatively large noise level. The tubes can be used as audio frequency amplifiers and their great advantage lies in the fact that their life is almost indefinitely long and their starting time is comparatively short. The experimental tube described in this article cannot be regarded as fully successful since it was not constructed of specially designed components. The authors express their gratitude to V.S.Gorshkov for testing the tubes.

X

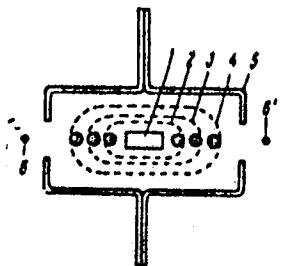
Card 4/5

S/024/60/000/006/007/015
E192/E482

Cold-Cathode Electronic Tubes

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut
im. V.I.Lenina (All-Union Electrotechnical Institute
imeni V.I.Lenin)

SUBMITTED: September 12, 1960



Фиг. 2. Схематический вид лампы с оксидно-магниевым катодом: 1 — оксидно-магниевый катод; 2, 3 и 4 — сетки, 5 — анод, 6 и 6' — вольфрамовые штифты стартера

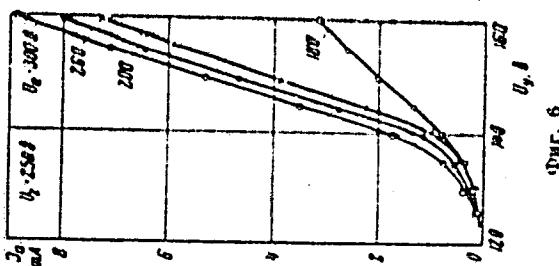


Fig. 6.

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L409/D301

93120

AUTHORS: Aranovich, R.M., Ksendzatskiy, I.G., and Timofeyev,
P.V.

TITLE: Some emission properties of electron tubes with
cold cathodes

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 9, 1962,
1529 - 1538

TEXT: The changes are studied which take place in electron tubes
during the initial period of operation of cold cathodes. It was
found that the temperature of the cathode core at $I_c = \text{const.}$, as
well as the starting time of the cathode, depend on the tube design.
All the measurements were carried out on electron tubes, described
by the authors (Ref. 4: Izv. AS SSSR, otd. tekhn. n. (Energetika i
avtomatika), 1960, 6, 143). A figure shows the dependence of the
emission current I_c on the cathode-core temperature, after treat-
ment in an oxygen atmosphere, and after additional treatment in a
hydrogen atmosphere. These experiments, however, yielded no defin-
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Some emission properties of ...

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te conclusions on the role of the oxygen or hydrogen treatment. The free path of electrons in a porous MgO-layer was measured. The experimental setup is described. The free path was found to be ~3 microns. As the MgO-layer is 40-50 microns thick, it follows that the fast electrons which are observed in the self-sustaining emission, are apparently not originating from the metallic cathode-core, but from the adjacent layers. The surface potential of the cold cathode was measured by a convenient method. This method involves the charging of a freely-suspended electrode which receives the electrons emitted by the cold cathode. It was found that the potential of the free electrode is very close to the potential of the cathode surface-layer. A figure shows the dependence of the potential and of the grid voltage on the emission current. The above method was used for controlling the surface-layer state at the initial moment of operation of the cathode. The measurements were conducted on a large number of tubes. It was found that the method used, yields a true estimate of the surface state and that changes take place in the cathode during its operation, as a result of which the surface potential is no longer constant. The experiments showed that the self-sustaining processes take place in the surface layer itself, whose

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Some emission properties of ...

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thickness is comparable with the free path. The obtained results yield the following practical conclusions: It is necessary to insert in the grid circuit of electron tubes with cold cathodes, large ballast resistors and to connect them to the total supply-voltage; it is recommended using a supply-voltage of the order of 500 volt. This leads to stabilization of the emission current. In those cases in which no additional (sustaining) grid is necessary, it is recommended linking all the grids; thereby the tube steepness increases. Thus, the triodes prepared had a steepness of $0.7 - 0.8 \text{ mA/v}$, whereas the steepness of the three-grid tubes was $0.4 - 0.5 \text{ mA/v}$, under the same conditions. The above investigations were carried out for cathodes under transient operating conditions which involve only a drop in the emission current at the initial moment. Further investigations, involving a current rise, are necessary. There are 14 figures. The most important English-language reference reads as follows: A.M. Skellet, B.G. Firth, D.W. Mayer, Proc. I.R.E., 1959, 47, 10, 1704.

X

SUBMITTED: March 19, 1962

Card 3/3

MUZYKA, N., master proizvodstvennogo obucheniya; VAPEL'NIK, L., inzh.-tehnolog (Baranovichi); KSENDZOV, I. (Tuapse); RYBAK, M. (Odesa); BIKBULATOV, G. (Kuybyshev); KOZLOV, A. (Yevpatoriya)

Editor's mail. Obshchestv. pit. no.6:48-49 Je '63.

(MIRA 16:12)

CA

High-voltage polarization in solid dielectrics. Va. 31
Korandov. Zhur. Tekh. Fiz. 10, 3-9 (1944). Formation
of high-voltage polarization is regarded as a consequence of
the free escape of the charge from the dielectric to the electrode
and the impossibility of entry of charge from the electrode
into the dielectric. In the stationary state during the move-
ment of charge of one sign there is formed a bulk charge of
const. d. at one of the electrodes; the steady current is
equal to zero. In the process of depolarization (dis-
charge) the quantity of electricity flowing in the reverse
direction, in the limit, is equal to the quantity of the
charge going into the electrode. In the real case it is
necessary to take into account that (1) the entry of charge
from the electrode into the dielectric is made easier by the
thermal motion and by the field, and (2) the mobility of the
strongly fixed charge, although very small, is not zero.
Comparison with exptl. results shows that even with such
an idealized treatment fair agreement is obtained.
B. A.

Concerning the Problem of High-Voltage Polarization
in Solid Dielectrics. (In Russian.) Ya. M. Kondrakov
Xurnal Tekhnicheskoi Fiziki (Journal of Technical
Physics), v. 18, Jan. 1948, p. 3-10.
Above problem was studied theoretically and ex-
perimentally. Good agreement was obtained. 10 ref.

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ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED SERIALIZED FILED

C 1

Electric properties of titanium dioxide. Ya. M. Kondratenko, Zhur. Tekh. Phys., No. 20, 117-20 (1960).—Samples of TiO_2 , $(98.1\% \text{ TiO}_2, 0.61\% \text{ SO}_3, 0.04\% \text{ Fe}_2\text{O}_3, 0.31\%$, and traces of CaO and P_2O_5), sintered at 1450° in a weakly oxidizing atm., showed, in a frequency of 10^4 - 10^6 hertz, a uniform decrease of the dielec. cond., with increasing temp. between -120 and $+120^\circ$; at 20° , $\epsilon = 68$, characteristic of rutile. In 40 hertz, ϵ is higher throughout, and passes through a min. at about -30° . The dielec. losses $\tan \delta$ increase with the temp., faster at lower frequencies. The sp. elec. cond. σ is high as compared with similar tech. materials. Chemically pure TiO_2 , with a total impurity content of 0.06-0.2%, of which the original 0.13% SO_3 was reduced to 0.03% by heating to 1200° , sintered under the same conditions in a mildly oxidizing atm., showed an altogether different temp. dependence of ϵ , with a practically temp. independent (between -100 and $+150^\circ$) at 3.5×10^4 hertz, slowly increasing with the temp. only up to about -80° and then remaining const. in 10^4 - 10^6 hertz. The increase of ϵ with decreasing frequency, at the same temp., is much more pronounced than with tech. TiO_2 , where it is significant only at higher temps. Similarly $\tan \delta$, in contrast to tech. TiO_2 , varies only slightly with the temp. and actually decreases with increasing temp. in acoustic frequencies. Further in sharp contrast to tech. TiO_2 , $\tan \delta$ increases with increasing frequency, in the range 10^4 - 10^6 hertz. With 0.66 mole % ZrO_2 incorporated into the TiO_2 , $\tan \delta$ as a function of the temp. passes through a very distinct max., at about -100 , -70 , -50 , and -30° at 2×10^4 , 1×10^4 , 3×10^4 , and 1×10^6 hertz, resp.; it increases with the temp. and has an inflection at about the same temp. at which $\tan \delta$ has a max. With increasing frequency, the max. of $\tan \delta$ becomes increasingly less marked. With 1.6 mole % ZrO_2 , the max. of $\tan \delta$ and the beginning of the increase of ϵ are

shifted to still higher temps.; while of increasing amounts of ZrO_2 not only shifts the max. of $\tan \delta$ to higher temps. but reduces the max. $\tan \delta$ and the max. ϵ . That the observed anomalies are not attributable to a reduction of TiO_2 to TiO_1 was demonstrated by comparing the mildly oxidizing firing with firing in O_2 . The chemically pure TiO_2 has σ about 1-1.5 orders of magnitude higher than that of the tech. product. In both cases, σ depends on the gradient, and the current becomes unstable at gradients of about 1000 v./cm. The nature of the elec. cond. could not be established. The dependence of $1/\tau$ on $1/T$ is linear throughout for the chemically pure TiO_2 , with an activation energy of 0.3 e.v. For the tech. product, the line has a break at about $10^4/T = 23$. Direct data of the O content of the chemically pure TiO_2 heated at 1450° in an oxidizing atm. showed an approx. 0.75% excess of O. The observed anomalies can then be interpreted by assuming that the excess O is concen. in the intergranular layers of the polycryst. specimens. Calculs. based on the assumption of an elec. heterogeneity of the TiO_2 samples, and a defect-conductor nature of TiO_2 with excess O, are in agreement with the observations. N.T.

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APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827010002-1"

KSENDZOV, Ya.M.

56-2-2/47

AUTHOR

SKURNAVI, G.I., KSENDZOV, Ya.M., TRICUBENKO, V.A., PROKHvatilov, V.G.
Relaxation Polarization and Losses in Non-Ferroelectric Dielectrics
Possessing Very High Dielectric Constants
(Relaksatsionnaya poliarizatsiya i poteri v nesnegnetoelektricheskikh
dielektrikakh s vysokoy dielektricheskoy pronitsayemostyu Russian)
Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 33, Nr 2,(8), pp 320 -
- 334 (U.S.S.R.)

PERIODICAL

ABSTRACT

In the polycrystalline dielectrics of the system $\text{SrTiO}_3 - \text{Bi}_2\text{O}_3 - \text{TiO}_2$
a relaxation polarization may be observed within a wide domain of
concentration of the individual components.
 $0,9$ to $0,7 \text{ SrTiO}_3 + 0,1$ to $0,3 \text{ BiTrO}_{7/2}$; $0,9$ to $0,7 \text{ SrTiO}_3 + 0,1$
to $0,3 \text{ Bi}_{2/3}\text{TiO}_3$; $0,7 \text{ SrTiO}_3 + 0,3 \text{ Bi}_{2/3}\text{TiO}_{11/4}$. This relaxation
polarization leads to a particularly high dielectric transmissivity
without the occurrence of ferroelectric characteristics. The charac-
ter of relaxation polarization changes with a change of the compo-
sition of components.

The various dielectrics of the $\text{Sr} - \text{Bi} - \text{Ti}$ - system could be sub-
divided into 3 classes which differ according to the composition of
crystal structure and other properties. The class which belongs to
the cubic crystal structure has $a = 3,898 \pm 0,002 \text{ \AA}$. The first class,

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Relaxation Polarization and Losses in Non-Ferroelectric Dielectrics Possessing Very High Dielectric Constants

which has the structure of perovskite, can be subdivided into two subgroups with ϵ to 1000 ($\text{Bi}_2\text{O}_3 \cdot 2\text{TiO}_2$ - content greater than 15 weight %) and ϵ to 6000 ($\text{Bi}_2\text{O}_3 \cdot 2\text{TiO}_2$ - content less than 15 weight %).

For all experimentally investigated dielectrics the temperature dependence (-200° to +260°C) and the frequency dependence of ϵ and $\tan \delta$ was determined in connection with their composition and structure. (With 2 tables, 9 illustrations, and 5 Slavic references).

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Vsesoyuznaya konferentsiya po fizike dielektrikov, Dnepropetrovsk, 1956.

Fizika dielektrikov; trudy konferentsii... (The Physics of Dielectrics; Transactions of the All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1958. 245 p. 3,000 copies printed.

Resp. Ed.: Skanavi, G.I., Doctor of Physical-Mathematical Sciences; Ed.: Filipova, K.V., Candidate of Physical-Mathematical Sciences; Ed. of Publishing House: Starokadomskaya, Ye.L.; Tech. Ed.: Astaf'yeva, G.A.

Sponsoring Agencies: Akademiya nauk SSSR. Fizicheskiy institut, and Dnepropetrovsk. Universitet.

PURPOSE: This book is intended for scientific research workers, professors, industrial engineers and laymen who are interested in the study and use of dielectrics and dielectric materials.

COVERAGE: This volume publishes reports presented at the All-Union Conference on the Physics of Dielectrics, held in Dnepropetrovsk in August 1956, sponsored by the "Physics of Dielectrics" Laboratory of the Fizicheskiy institut

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The Physics of Dielectrics (Cont.)

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imeni Lebedeva AN SSSR (Physics Institute imeni Lebedev of the AS USSR), and the Electrophysics Department of the Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University). The present collection presents reports and discussions under the following subject headings: a) the influence of radiation on the properties of dielectrics; b) electro-and photoconductivity of dielectrics; c) methods of measuring dielectric properties; and d) practical uses of dielectrics. Abstracts of reports dealing with dielectric polarization and losses, dielectric disruption, electrets and corresponding materials published in "Izvestiya AN SSSR, seriya fizicheskaya", Nrs 3 and 4, 1958 are included. The editors state that reports submitted for publication, but for some reason not presented at the conference, were not included because of lack of space. References are given at the end of each conference report.

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AUTHOR: Kaendzov, Ya. M. 48-22-3-3/30

TITLE: Influence of Admixtures on the Electric Properties of Rutile (Vliyaniye primesey na elektricheskiye svoystva rutila)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958, Vol. 22, Nr 3, pp. 237-248 (USSR)

ABSTRACT: Highly increased values of the ξ of rutile were frequently observed in purified preparations (References 1,3) in different technical raw materials (Reference 4) and in technical raw materials with the admixture of alkaline earth metal oxides (Reference 5). The difference of the experimentally found values of the aforesaid works is a consequence of the different conditions of investigation. The author presumes that the abnormally high values in pure or technical preparations of TiO_2 are connected with the admixtures of Nb- and Ta-oxides contained in them. Admixtures of different valence are dissolved in compensated state in natural minerals and in technical preparations. A very thorough chemical purification disturbs the original ratio of the

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